

A. AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Currently amended) An integrated low profile display apparatus, comprising:
a substrate having a first surface and a second surface;
said substrate defining at least one penetration extending through said substrate from said first surface to said second surface;
each said penetration having a side wall, an entrance opening defined by said first surface, and an exit opening defined by said second surface; and
at least one light emitting device;
each said light emitting device mounted to said first surface of said substrate proximate the entrance opening of a corresponding penetration and adapted to selectively admit light to said penetration via said entrance opening; and
each said light emitting device being electrically connected to a corresponding electrical conductor ~~disposed on~~ attached to said first surface of said substrate.
2. (Original) The apparatus of claim 1 wherein said substrate is of substantially uniform thickness.
3. (Original) The apparatus of claim 1 wherein said substrate is of varying cross-section.
4. (Original) The apparatus of claim 1 wherein said substrate comprises a printed wiring board.
5. (Original) The apparatus of claim 1 wherein said substrate comprises a user interface panel.
6. (Original) The apparatus of claim 1 wherein said side wall is covered with a

substantially opaque material.

7. (Original) The apparatus of claim 6 wherein said substantially opaque material is a reflective material.

8. (Original) The apparatus of claim 7 wherein said reflective material is a paint.

9. (Original) The apparatus of claim 7 wherein said reflective material is a reflective coating.

10. (Original) The apparatus of claim 1 further comprising a light guide within said penetration.

11. (Original) The apparatus of claim 10 wherein said light guide comprises a material having a high index of refraction.

12. (Original) The apparatus of claim 11 wherein said material having a high index of refraction comprises a light transmissive epoxy.

13. (Original) The apparatus of claim 10 wherein said substrate comprises a substantially opaque material.

14. (Original) The apparatus of claim 10 wherein said substrate comprises a material substantially impervious to light transmission.

15. (Previously presented) The apparatus of claim 1 further comprising a light diffuser associated with said exit opening of said penetration.

16. (Original) The apparatus of claim 15 wherein said diffuser comprises a layer of light transmissive material applied over said exit opening.

17. (Previously presented) The apparatus of claim 1 wherein said light emitting device comprises a light emitting diode.

18. (Previously presented) The apparatus of claim 1 wherein said light emitting

device comprises a lamp.

19. (Previously presented) The apparatus of claim 1 wherein said light emitting device comprises an OLED.

20. (Previously presented) The apparatus of claim 1 wherein said light emitting device comprises a PLED.

21. (Previously presented) The apparatus of claim 1 wherein said display comprises a single element defined by a single penetration.

22. (Previously presented) The apparatus of claim 1 wherein said display comprises plural elements defined by plural penetrations.

23. (Original) The apparatus of claim 1 further comprising at least one electronic component mounted on said substrate.

24. (Original) The apparatus of claim 23 wherein said electronic component comprises a sensor.

25. (Original) The apparatus of claim 24 wherein said sensor comprises at least a first electrode disposed on said substrate.

26. (Original) The apparatus of claim 25 wherein said sensor further comprises a second electrode disposed on said substrate.

27. (Original) The apparatus of claim 25 wherein said sensor further comprises an active component electrically coupled to said first electrode.

28. (Original) The apparatus of claim 25 wherein said sensor further comprises an integrated control circuit electrically coupled to said first electrode.

29. (Currently amended) An integrated low profile display apparatus, comprising:
a substrate having a first surface and a second surface;

said substrate defining at least one cavity;
said cavity having a substantially opaque side wall, an entrance opening defined by said first surface, and a closed end; and
at least one light emitting device;
each said light emitting device mounted to said first surface of said substrate proximate the entrance opening of a corresponding cavity and adapted to selectively admit light to said penetration via said entrance opening, and each said light emitting device electrically coupled to an electrical conductor attached to said first surface of said substrate.

30. (Original) The apparatus of claim 29 wherein said substrate is of substantially uniform thickness.

31. (Original) The apparatus of claim 29 wherein said substrate is of varying cross-section.

32. (Original) The apparatus of claim 29 wherein said substrate comprises a printed wiring board.

33. (Original) The apparatus of claim 29 wherein said substrate comprises a user interface panel.

34. (Original) The apparatus of claim 29 wherein said side wall is covered with a substantially opaque material.

35. (Original) The apparatus of claim 34 wherein said substantially opaque material is a reflective material.

36. (Original) The apparatus of claim 35 wherein said reflective material is a paint.

37. (Original) The apparatus of claim 35 wherein said reflective material is a reflective coating.

38. (Currently amended) The apparatus of claim 29 further comprising a light guide within said ~~penetration~~ cavity.

39. (Original) The apparatus of claim 38 wherein said light guide comprises a material having a high index of refraction.

40. (Original) The apparatus of claim 39 wherein said material having a high index of refraction comprises a light transmissive epoxy.

41. (Original) The apparatus of claim 38 wherein said substrate comprises a substantially opaque material.

42. (Original) The apparatus of claim 38 wherein said substrate comprises a material substantially impervious to light transmission.

43. (Previously presented) The apparatus of claim 29 further comprising a light diffuser associated with said closed end of said cavity.

44. (Previously presented) The apparatus of claim 43 wherein said diffuser comprises a layer of light transmissive material applied over said closed end of said cavity.

45. (Previously presented) The apparatus of claim 29 wherein said light emitting device comprises a light emitting diode.

46. (Previously presented) The apparatus of claim 29 wherein said light emitting device comprises a lamp.

47. (Previously presented) The apparatus of claim 29 wherein said light emitting device comprises an OLED.

48. (Previously presented) The apparatus of claim 29 wherein said light emitting device comprises a PLED.

49. (Previously presented) The apparatus of claim 29 wherein said display comprises a

single element defined by a single cavity.

50. (Previously presented) The apparatus of claim 29 wherein said display comprises plural elements defined by plural cavities.

51. (Original) The apparatus of claim 29 further comprising at least one sensor mounted on said substrate.

52. (Original) The apparatus of claim 51 wherein said sensor comprises at least a first electrode disposed on said substrate.

53. (Original) The apparatus of claim 52 wherein said sensor further comprises a second electrode disposed on said substrate.

54. (Original) The apparatus of claim 52 wherein said sensor further comprises an active component electrically coupled to said first electrode.

55. (Original) The apparatus of claim 52 wherein said sensor further comprises an integrated control circuit electrically coupled to said first electrode.

56. (New) The apparatus of claim 1 wherein a plurality of said at least one penetrations are arranged to form a multiple element display.

57. (New) The apparatus of claim 1 wherein a plurality of said at least one penetrations are arranged to form a seven-segment display.

58. (New) The apparatus of claim 29 wherein a plurality of said at least one cavities are arranged to form a multiple element display.

59. (New) The apparatus of claim 29 wherein a plurality of said at least one cavities are arranged to form a seven-segment display.